THE RARA RAG
Newsletter of The Rochester Amateur Radio Association, Inc.
Founded in 1931

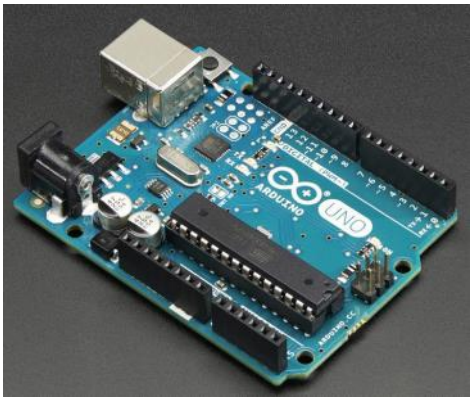
AUGUST 2017
VOLUME 69, ISSUE 12

GETTING STARTED WITH MICROCONTROLLERS

ANAND CHOUDRI, KC2KPG—RARA VICE PRESIDENT

Have you wanted to dabble with microcontrollers and build something just for the sake of experimenting, but were not too sure about whether you could pull it off? As Scott Theis, W2LW puts it, there are a lot of options for getting started with microcontrollers for ham radio and other projects. He has kindly agreed to share his knowledge with us at our August 2nd meeting and will explore some of the options, terminology and common microcontrollers such as Arduino and Raspberry Pi. He will give us an overview on microcontrollers, what they are, microcontroller jargon, and how to get stared. The program will focus on Arduino, PICAXE and Raspberry Pi, general purpose I/O pins, Integrated Development Environments, and of course how to get started with these devices. He also plans to show us some working examples of microcontroller hardware.

Please join us for his presentation on Wednesday August 2, 2017 at 7:00 PM in the Boy Scouts Building located at 2320 Brighton Henrietta Town Line Rd, Brighton, NY 14623.



RARA BANQUET

Friday September 22, 2017

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PREZ SEZ

FOREST SHICK, WA2MZG—RARA PRESIDENT

Yikes - August is upon us!

Vacations are coming to an end. Parents are buying school clothes and supplies for their children. All you teachers out there are thinking about the school year ahead - lesson plans, new students, testing and grading - well, at least my daughters are thinking about all of that!

Not to worry, there are at least 5 more weeks of “nice” Rochester weather to enjoy playing radio - outside.

Have you started to line up ham radio projects for fall and winter? I have! 2 in particular.

First, I have written a program in C# to operate my KX3, using the built in digital modes, from my laptop. Yes, I know that Elecraft supplies a program but it was more fun to write my own. Next, I would like to move the program to a Raspberry Pi. I already have WSJT-X on the Pi so this seems like the logical next step. I’m a bit excited about Scott’s presentation at our August meeting as he will be discussing Pi’s among other devices.

Second, I would like to connect my antenna rotator controller to my laptop and then the Pi. When you select the call sign of the station you would like to contact, a program would query the QRZ data base to find the antenna heading and then automatically point the beam for you. Again, there probably is something out there already but I like to do it myself.

If either or both of these projects are successful - I will share them with you.

RARA Picnic

I was not able to attend our summer picnic but I have only heard positive comments about it. Thanks to all that participated and a special thanks to the organizers: Anand Choudri and Tim Barrett. Without leaders we would have no events.

Oh and thanks Jon Dickason for the Fox Hunt.

Picnic pictures from Jon Dickason, N2JAC

Consider being a leader for a RARA event. Ask a member of our Board of Directors or our Public Service Coordinator how YOU can HELP!

CALENDAR OF EVENTS

AUGUST 2ND - RARA General Meeting
7:00 PM at BSA Headquarters, 2320 Brighton Henrietta Town Line Rd

AUGUST 3RD - RARA Board of Directors
5:30 PM at BSA Headquarters, 2320 Brighton Henrietta Town Line Rd

A VERY *LITTLE* REPAIR ON THE ICOM 730

Bill Hopkins, AA2YV

The Morality Play

A cultural child of the Great Depression and the Midwest Dust Bowl, I emulated my father in the art of fixing things and treating objects with care. That's probably why I love to get old radios and make them work again, such as an old Heathkit VTVM. "You'll not find another one, and certainly not a new one," my imagination says I frequently heard the family say. So fix what you've got. Be creative. Invent the yet uninvented to make the repair.

You can imagine that my own children don't have a clue about that world of yesteryear. They're gone from the nest these many years, and I can now repair boat anchors in privacy. I mostly share the joys of a successful repair with myself, except you, of course.

It's still possible to graduate from vacuum state radio repair to the early solid states, provided you rely on schematics and the KISS principle in matters of superhet thinking. Maybe 90% of the problems I've encountered have been classic gobsmackers. "If I'd only looked there, a bit more closely," I've too frequently sighed (X%$&!) to myself. So, if a radio isn't loaded with digital "stuff," I've learned I can usually spec out its problem/s and get it back on the air. And of course, I always follow Kevin Carey's dictum: "Don't do something; stand there."

ICOM-730 on the bench and ready to go

So, the Radio…

This ICOM 730 transceiver has been on my shelf for a few years now. I purchased it at a Dome Arena Hamfest, just after 2000. It was/is in great shape. The rig has a T/R relay switch, so there's no QSK or anything fancy. The hand mic is stingy on output, but otherwise this is a fantastic older solid-state rig for back-up, camping or as a loaner. I added the SSB

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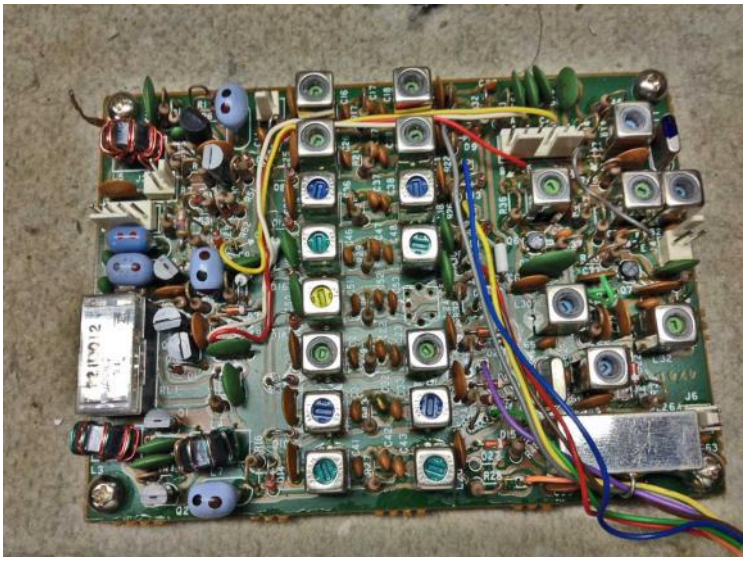
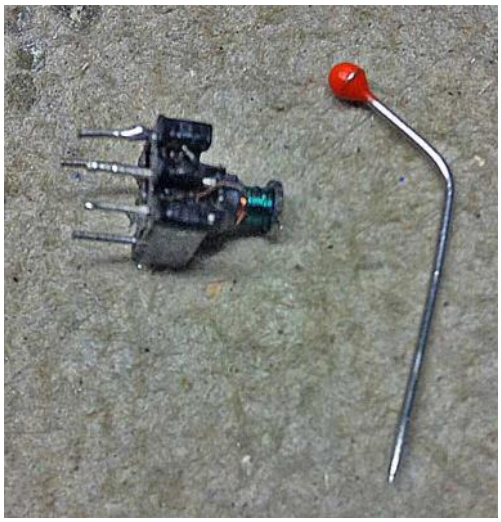
and CW filters, and I cut the little green wire on the RF board, permitting me to transmit on 30 meters.

But when I loaned it out a year ago, I noticed it was dead on 80 meters! How so? I had never been on 80 with the rig back then, so this problem had quite slipped by me. Early this June I hauled it out, made tests and wrote down all sorts of accompanying symptoms. It all pointed to the RF board, an item that "rarely goes bad," according to Malcolm at MTS in Toledo, WA. But that's where it was anyway. Was it a manufacturing flaw?

I found the two very small inductor canisters for 80 meters (with the yellow tuning slugs). One of them (L22) was diagonally sitting on the board – not a very assuring sign. The problem lies here, I surmised. (L24 for 40 meters was also a bit catty-wumpus, but that band still works. DO NOT TOUCH!)



730's RF Board, with L24 removed



L24 is small; plastic base can easily be destroyed by heat

Well, I carefully solder wicked the contacts clean and lifted the little can (L24), carefully disassembling it (where no "man" has gone before) and discovered that three of four eensy-teensy wires at the ends of the two windings were severed at their through-hole pins. We're talking one and two millimeter lengths. It is possible that only one wire had been severed; I may have burned up the other two by applying too much heat to wick away the solder on the PCB. Who's to know?

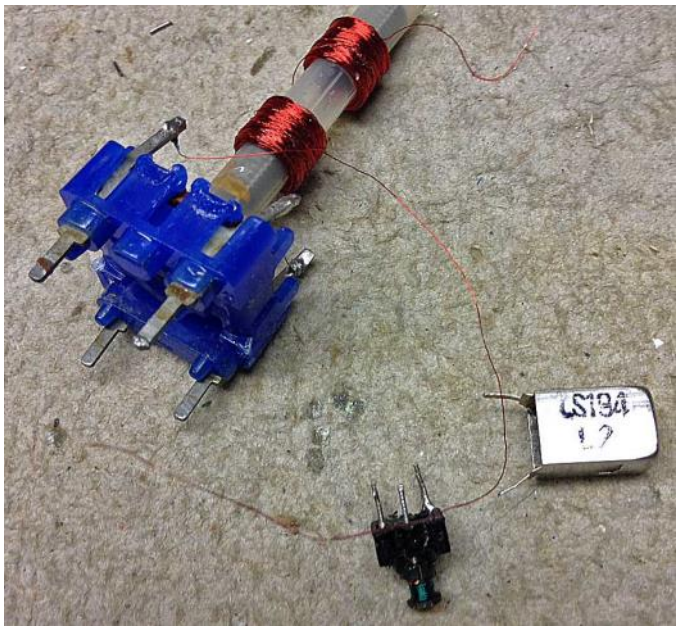
I hemmed and hawed about what sort of very, very short wire patches I could fabricate for the repair. I played through mentally what would happen, "if," when using this or that wire gauge. All thought experiments ended in failure.

So I left everything on the bench and went on a very, very long trip. On the plane I thought, "Gee, this very small wire on these "gratis" earphones could do the job. But then, how would I successfully strip off the rubber insulation? It was only when I was on the train between S and G that it came to me like a flash. Of course! I have a whole box of some former ham's discarded 455 kHz IF cans. What a novel idea!

So back home, as I played the second day of the Jet-Lag Blues, I scoped out how to remove insulation (ever-so slowly) and then what to solder first, what second and what third. I didn't want to sever the tack wire patch solder job internally by applying too much heat on an external tack down. At each step I tested for continuity and assured isolation from the canister that would be grounded. After a good two hours, I had everything back together.

The rig fired right up. I peaked the inductor at 3.750 MHz by copying a signal from my old EICO signal generator.

The last job was to create a note and squirrel it away next to the RF board, so the next owner would understand what had been done and why one shouldn't apply major heat to very small wire leads.



Wire used from the 455kHz IF inductor

INTERNATIONAL LIGHTHOUSE LIGHTSHIP WEEKEND

David Timmons, W2DST

Once again we will operate station K2R from the grounds of the Charlotte-Genesee Lighthouse (Lake Ave. near Latta Rd.) for the 2017 International Lighthouse Lightship Weekend. This annual Amateur Radio weekend event was founded in 1995 by 2 members of the AYR Amateur Radio Group, AARG, Scotland and held on the 3rd full weekend in August. This is not a contest, it is simply a fun event for all experience levels to highlight lighthouses and lightships around the world. It is also a great way to promote amateur radio to the public. This year's 48 hour event starts at 0001 UTC on Aug. 19. We will be generally operating during the hours the lighthouse is open, 1 - 5PM local time on August 19 & 20. Operating time will be extended depending on how many volunteer operators can join us. Go to **https://illw.net/** for event details and a list of registered lighthouse stations. If you would like to join us, stop down. Contact Dave Timmons, W2DST, if you would like to help. **W2DST@ARRL.NET**

WALNUT HILLS DRIVING COMPETITION

Joe Walker, KA8WH

Each year, during August, the Walnut Hills Farm in Pittsford, hosts The Walnut Hill Carriage Driving Competition. This international event is in support of the art and sport of traditional driving and is held in a 19th century country fair setting.

This five day schedule of classes, Wednesday August 9th - 13th, with a wide variety of 19th century carriages exhibited by over 250 competitors from some 20 states, Canada, and Europe. Antique carriages from tiny pony carts to huge road coaches drawn by a four-in-hand (four horses) appointed with highly polished brass and silver harness will be participating in all phases of classical driving competition, including cross-country obstacle classes and the pleasure driving classes.

A minimum of fifteen (15) ham operators are needed for safety of the participants along the cross country obstacle course, culminating Sunday with a pleasure drive from Walnut Hills Farm to Mendon Park. Only a few hours of our help is needed each day. Radio operators can pick the day and times they wish to participate based on their availability. New amateur or anyone interest in public service is welcome.

Sign up at http://www.rochesterham.org/PublicService/WalnutHill.htm

PUBLIC SERVICE UPDATE

Mike Moore, KC2NM, Public Service Coordinator

Summer weather finally arrived to upstate New York and we have been able to get out into the field and participate in the summer ham radio public service events. In July, some of us were able to help out with the SIARC event "Finger Lakes Challenge" to benefit the MS Society. This was a two day event with ride courses extending south from Geneva on Saturday and east on Sunday. It was a very well run and fun event.

This August, RARA will participate in the **Walnut Hill Farms Driving Competition Wednesday - Sunday August 9-13**. Look for an invitation from Joe Walker KA8WJH and Jack Tripp N2JAT co-captains for the event elsewhere in this RARA RAG. The signup link is repeated here: **http://bit.ly/RARA_WalnutHill_Sign-up_Form**

More Upcoming Events Bike MS:ROC the Ride Saturday September 9

This event supports a very worthy cause. It starts out in Genesee Valley Park, heading south from there. A minimum of ten (10) ham operators are needed for a half day cycling event consisting of three separate tour distances. We will provide communications for the event and specific tasks may include bike repair van communications, rider escort safety communications, staff communications, and re-supply communications. Provide safety communications for participants by summoning EMT's, as necessary, via Net Control. Go to **http://bit.ly/RARA_BikeMS-ROC_Volunteer_Sign-up_Form** to sign up.

Information for events scheduled for the balance of the year are described on the Public Service page at RochesterHam.org. These are summarized in the following table. Your participation is welcome in the execution and leadership of these events. If you would like more information about taking a leadership role please contact me at **mikemoore@ieee.org** or in person at one of the upcoming RARA meetings.

Event	Location	Date
Fairport Lift Bridge Regatta	Erie Canal – Fairport, NY	Sunday September 17
Jamboree on the Air	BSA Camp Babcock-Hovey - Ovid, NY	Friday - Saturday October 20-21
Pumpkin Patrol	Overpasses of the New York State Thruway	Monday & Tuesday October 30-31
Science & Technology Days	Rochester Museum & Science Center	Tuesday - Saturday December 26-30

ROCHESTER HAMFEST 2017

Tim Guyot, KB1POP
Anand Choudri, KC2KPG
Tim Barrett, K9VB

Despite some last-minute challenges, our 90th Rochester Hamfest will go down in the books as a success. While I didn't make it into the flea market grounds until the afternoon, I know there were a lot of great deals based on the amount of equipment I saw buyers walking back to their cars before the clock even struck 10.

Attendance was down this year, to about 500, but in this case, that was probably a good thing. For those who aren't aware, we had been planning for months to hold the event in 5 acres of field on the other side of the street. Just a few days before, we found that the heavy rains in April rendered the field too soft to drive on. Thankfully, Walnut Hill Farm offered to let us move across the street, but into a much smaller space. We are very thankful to them for their flexibility; had they not offered us this accommodation, we would have been forced to cancel the event at the last minute.

We sold over 900 raffle tickets and the winners were:

- Elecraft KX2 HF Transceiver - KG2U
- Bird 43 Wattmeter - W1OCK
- FlexRadio Gift Certificate - KD2DBU
- West Mountain Radio PWRgate PG40S - N2FKW
- SignaLink USB SoundCard Radio Interface- N2JAC

The Country Store had another successful year. This is where we sell on your behalf for a portion of the sale price. Thanks to Bill Hopkins AA2YV for coordinating this and making sure it ran smoothly, and thanks to anyone who used the service or donated equipment.

Thanks also to the ARRL for their attendance. The Regional Section Manager for Western New York, Laura Mueller, N2LJM, and Tom Abernethy, W3TOM, the Atlantic Division Director both made long drives to get to our hamfest. Their efforts are appreciated!

As always, the event wouldn't be a success without support from volunteers. We had some trouble recruiting this year, so many volunteers worked extra-long shifts to ensure things kept moving smoothly. We can't thank them enough!

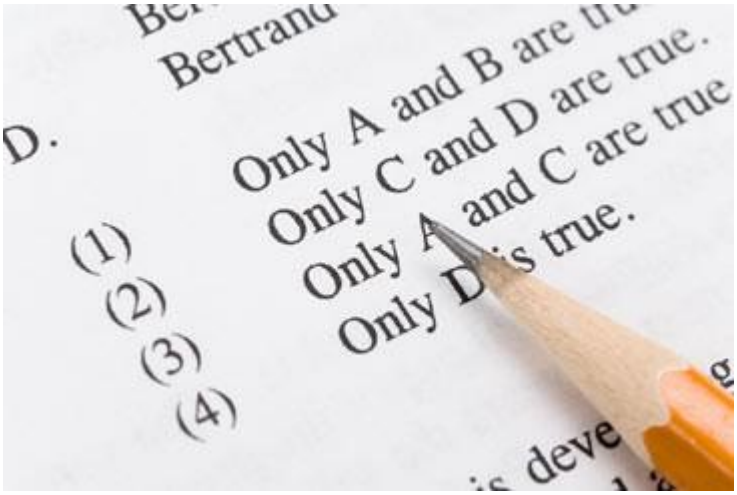
Pictures by Van, N2BNE

VE Team

The next **ALWAYS FREE** testing session:
Saturday September 16th.

To avoid giving your SSN go to:
http://wireless.fcc.gov/uls/index.htm?job=home
Register and bring the resultant FRN.

For more info:
https://www.laurelvec.com/?team=RARA



Don Kiser - AC2EV
RaRa Board member
VE Team Leader
585-613-1035

New licensees names are in **BOLD**

RaRa Calendar

Tim Barrett, K9VB

August 2017						
Sun	**Mon**	**Tue**	**Wed**	**Thu**	**Fri**	**Sat**
		1 Phone Fray	**2** **RaRa Monthly Mtg** 7:00pm, BSA HQ, B'ton Henrietta TLR	**3** **RaRa BoD Meeting** 5:30pm, BSA HQ, B'ton Henrietta TLR NCCC Sprint QRP Fox Hunt	**4**	**5** NEW! ARRL 222 MHz and Up Contest Ithaca Hamfest 10-10 SSB Contest Euro HF Champ NA QSO Party
6 NEW! ARRL 222 MHz and Up Contest 10-10 SSB Contest NA QSO Party SARL HF Phone Ctst	**7** ARS Spartan Sprint	**8** **SIARC 7.30pm** Phone Fray	**9** **Walnut Hill Driving Competition** ROC City Net 8:00pm 3.826 MHz	**10** **Walnut Hill Driving Competition** NCCC Sprint QRP Fox Hunt	**11** **Walnut Hill Driving Competition**	**12** **Walnut Hill Driving Competition** WAE DX Contest CW SKCC Sprintathon MD QSO Party
13 **Walnut Hill Driving Competition** WAE DX Contest CW SKCC Sprintathon MD QSO Party 4 States QRP Sprint	**14**	**15** Phone Fray AWA 2017 Convention	**16** ROC City Net 8:00pm 3.826 MHz AWA 2017 Convention	**17** AWA 2017 Convention NCCC Sprint QRP Fox Hunt	**18** AWA 2017 Convention	**19** RRRA Hamfest AWA 2017 Convention SARTG RTTY Ctst ARRL 10 GHz up Ctst Russian District Ctst Keyman Japan Ctst Feld Hell Sprint NA QSO Party SSB CVA CW DX Contest
20 SARTG RTTY Ctst ARRL 10 GHz up Ctst Russian District Ctst Keyman Japan Ctst SARL HF Digital Ctst CVA DX CW Contest	**21** Solar Eclipse QSO Pty	**22** Phone Fray	**23** ROC City Net 8:00pm 3.826 MHz	**24** NCCC Sprint QRP Fox Hunt	**25**	**26** HA, OH, KA QSO Pty W/VE Islands QSO Pty ALARA Contest SCC RTTY Contest YO DX HF Contest
27 HA, OH, KA QSO Pty W/VE Islands QSO Pty ALARA Contest SCC RTTY Contest YO DX HF Contest SARL HF CW Contest	**28**	**29** Phone Fray	**30** ROC City Net 8:00pm 3.826 MHz	**31** NCCC Sprint QRP Fox Hunt		

Print this calendar and leave it by your radio.

Save The Dates

Winterfest - Saturday February 10, 2018 - Stewart Lodge, Mendon Ponds Park

Picnic - Saturday July 14, 2018 - Stewart Lodge, Mendon Ponds Park

Banquet - Friday September 22, 2017- Burgundy Basin Inn

News From Area Clubs

Monroe County ARES / RACES News

The Monroe County Amateur Radio Emergency Service, Inc. holds its meetings on the fourth Thursday of each month. Anyone interested, members and non-members, are welcome to attend.

There will be no meeting in July or August.

The next ARES Meeting will be held on: **Thursday, September 28, 2017, at 6:00 PM.** Meetings are held at the **Greater Rochester Chapter of the American Red Cross HQ, 50 Prince Street, Rochester, NY 14607.** (Located behind the Rochester Auditorium Theatre, 885 Main St. E.)

ARES NET:
Monroe County ARES/RACES meets on the air every Thursday of the month at 7:00 pm, on the 146.61 MHz (-) 110.9 Hz PL repeater. The only exception to that are nights when we hold our regular meeting, generally on the 4th Thursday of the month.

WEB: www.monroecountyemcomm.org

Severe Weather Alerts:
Winter brings severe weather in the form of heavy snow and strong winds. If you experience severe weather, especially when accompanied by damage to property in your area, listen to your local ARES/RACES repeaters for information. While official ARES/RACES activation could be a possibility, it is more important that we open a spontaneous net simply to share information about weather conditions in your immediate area. Don't wait for someone else to do it. Pick up the microphone and start a net. Have each check-in station give you a situational awareness report and emergency power report. If you don't have a copy of the directed net protocol, you can find one at the WEB address listed above. (Activities/ARES Net/ Net Script/ Downloads)

NBEMS:
Want to learn about Narrow Band Emergency Messaging System (NBEMS)? It's the latest and easiest way to "Go Digital!" Bring your laptop computer and 2-M handheld transceiver. We will conduct an NBEMS clinic after every meeting through June 2018.

Rochester Radio Repeater Association, RRRA

The RRRA will be on summer hiatus during July and August. The Rochester Radio Repeater Association, RRRA invites you to attend its September 16th 2017 meeting. Meetings are held on the 3rd Friday of the month in the Pittsford Town Hall Basement starting at 7:30 pm. The RRRA officers are Bob Shewell, N2HJD President, Bob Odell, N2BZX Vice President, ED Wilkonski, KC2WM Secretary, and Bob Smith, NS2B-Treasurer / Membership Chairman. RRRA also accepts donations to the club. If you are not currently a member and want to support RRRA, you can join at our monthly meeting or on our web site **www.k2rra.org**

If you have some spare time and wish to support your club, you can show up at the Hamfest prep meeting held on the Barnard Fireman's field on Sunday July 30th, and Aug 13th at 4:00pm. I hope to see everybody there on the Hamfest Aug. 19th. Bob O'Dell, N2BZX, Vice President

Rochester VHF Group

For information on the Rochester VHF Group, visit our website **www.rvhfg.org** for details.

The Rochester VHF Group sponsors an informal On-Air Net every Monday at 2100 local time on 144.260 MHz USB and a 6 Meter Net every Thursday at 2100 local on 50.200 MHz USB.

More club information can be found by visiting **www.rvhfg.org** or just calling in any Monday or Thursday night. All are welcome to check in to these nets.

ROCHESTER DX ASSOCIATION, RDXA

The Rochester DX Association does not meet in July or August. The next meeting will be Tuesday 19 September, 7:30PM

RDXA meets the 3rd Tuesday of every month (September through May) except for December, which is the Annual Holiday Banquet. Meetings are open to everyone and all are encouraged to attend.

Meetings are held at the Monroe County EOC 1190 Scottsville Rd. (second floor), Rochester, NY 14624 at 7:30PM.

Monthly programs are announced in the official RDXA newsletter or on the website at **www.RDXA.com**

XRX AMATEUR RADIO CLUB

No meetings until September. Stay up-to-date by visiting **http://xarc.us**

SQUAW ISLAND AMATEUR RADIO CLUB, SIARC

The Squaw Island Amateur Radio Club (SIARC) meets every second Wednesday of the month at 7:30PM at the Ontario County Safety Training Facility, 2914 County Road 48, Town of Hopewell. We have License Exam Testing every other month which begins at 6:30PM. The next meeting will be our annual Picnic. A date and location has yet to be determined. This will be set at our July meeting. The club will provide meat and beverages and attendees are asked to bring a dish to pass, desert, or appetizer.
73's Steve Benton VP SIARC WB2VMR

AMATEUR RADIO ASSOCIATION OF THE SOUTHERN TIER

ARAST meets the third Thursday of every month at the Town & Country Fire house in Horseheads. C-CARES meets the first Tuesday of the month except February. C-CARES covers the entire area in Chemung , Schuyler and Steuben Counties and everyone is welcome.

Don't forget to mark your calendar's for this years hamfest September 30, 2017 located at the Chemung County Fairgrounds in Horseheads , NY. Tickets are available from any board member and online at our website .

Communicators are still needed for this years Wineglass Marathon October 1, 2017 . If you can help out in any manner, please contact the emergency coordinator at: **emergencycoordinator@stny.rr.com** . If you wish to help out the need for notification is now. We need to let law enforcement know who is volunteering.

Our website is almost complete undergoing construction . I understand that until the re-write is complete, it will still be usable. So go ahead and check out our website at **www.arast.org** .

COMMUNITY AMATEUR RADIO CLUB, CARC

If you are interested in being a part of this forward thinking and active club, visit us at a meeting or join us on one of our weekly nets. We meet at the Hoag Library (134 S. Main St. Albion, NY) on the first Saturday of each month at 7pm. Each meeting has a brief training/refresher period with upcoming topics including: net protocol, repeater set-up/maintenance, and digital signaling. The club holds a net every Sunday evening at 8pm (winter) and 9pm (summer) - 0100 UTC Monday - on 147.585 simplex, and we host the Thursday Night Social Net, Thursday at 8:30pm on 147.285+. We'd love to hear you check-in! Take a look at the club website for more info: www.**k2srv.org**

DIGITAL COMMUNICATIONS ASSOCIATION OF PERINTON, DCAP

DCAP members continue to experiment with leading edge digital communications modes. We were formed in 1994 to foster the development of local and regional packet radio networks using AX25 and TCP/IP. Today we have members using the club sponsored DSTAR repeater (KB2VZS on 444.8MHz), several personal and public **DSTAR hotspots** (using the dvrptr board), Yaesu fusion systems on non-club repeaters and DMR. The last mode is being enjoyed locally through a **DV-Mega**-**Raspberry PI** combination. DCAP meets for breakfast at 7am nearly every Saturday morning at **Rikki's Family Restaurant** in Fairport and everyone is welcome to join us. Talk in is on the KB2VZS analog repeater on 146.715MHz with a PL of 110.9 Hz.

Westside Amateur Radio Club

The mission of the Westside Amateur Radio Club is to provide emergency communications services to the community, to assist other civic organizations, to promote the technical craft of amateur radio through class training and testing, to mentor new members, and enhance fellowship among radio amateurs.

The Westside Amateur Radio Club meets on the second Wednesday of the month at the Chili Public Library. The Library is located at 3333 Chili Ave, Rochester, NY 14624.

The talk in repeater for all meetings is the K2RWC Repeater 146.700MHz - 110.9

Website: **http://WestsideAmateurRadio.club**

Interlock Rochester - K2HAX - Rochester's Hackerspace

Interlock Rochester is open most every Tuesday night at 7pm. We're in the Hungerford Building (1115 East Main Street, Rochester NY), just north of Village Gate. Come to Door #7 (to the left of Comics Etc) and buzz Suite 200. Want to know more? Visit our website at **http://www.interlockroc.org/**, contact us at **info@interlockroc.org**, or find us in #interlock on Freenode IRC.

Genesee Valley Amateur Radio Association

Email **n3dsp@lafireline.net** for details.

Rochester Makerspace

The Rochester Makerspace is located at the rear of 850 St. Paul Street in almost 4,000 square feet of workspace. We are a volunteer-run 501c(3) nonprofit organization and our mission is to encourage learning, creativity and collaboration. We do that by providing low-cost and free access to sophisticated tools, offering a wide variety of classes, and by providing opportunities for "makers," artists and crafts persons of all kinds to meet and learn from each other.

Drop in to explore, learn and make at our weekly open house:
Every Thursday Night, 6 to 10 PM – Weekly Community Night & Open House
Every Saturday, 11 AM to 3 PM – Weekly Community & Open House
Park in the lot at Scrantom St. and Conkey Ave. and follow the signs.

Every Thursday Night, 7 to 9:30 PM – Microcontrollers & Robotics Meetup

A ham bench is set up with a 2 meter FM radio and a laptop with websdr. Waiting for nicer weather to install outside antennas for the Heathkit HW101 transceiver and Kenwood all mode 2 meter transceiver. Donations of ham equipment accepted.

For more information visit **Rochestermakerspace.org**

HAMFESTS

Ithaca Hamfest
Saturday August 5, 2017
http://tcara-ny.org/hamfest/

RRRA Hamfest at Barnard
Saturday August 19, 2017
http://www.k2rra.org/

Lancaster Hamfest
Saturday September 9, 2017
http://w2so.org/lancaster-hamfest/

Elmira Hamfest
Saturday September 30, 2017
http://www.arast.org/index.php?option=com_content&view=article&id=4&Itemid=6

FOR SALE FT-101ZD

FOR SALE 1967 DAVCO DR-30

Scarce 1967 Solid State Receiver
Includes: receiver, power supply, all documentation and original box
For more details visit **www.Bliley.net/davco**

THE AMATEUR'S CODE

Originally written by Paul M. Segal, W9EEA (1928)

THE RADIO AMATEUR IS:

CONSIDERATE	Never knowingly operating in such a way as to lessen the pleasure of others.
LOYAL	Offering loyalty, encouragement and support to other amateurs, local club, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.
PROGRESSIVE	With knowledge abreast of science, a well built and efficient station and operation beyond reproach.
FRIENDLY	With slow and patient operation when requested, friendly advice and counsel to the beginner, kindly assistance, co-operation and consideration for the interests of others. These are the hallmarks of the amateur spirit.
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SEPTEMBER RAG DEADLINE

AUGUST 15, 2017

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2320 Brighton Henrietta Town Line Rd

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Rochester Area Repeater Listing

THE RARA RAG

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